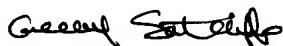


REMARKS

This Preliminary Amendment is being submitted to present claims which are in condition for allowance. No new matter has been entered. If the Examiner has any comments or suggestions to place the application in even better form, such as to result in a Notice of Allowance, the Examiner is encouraged to telephone the undersigned attorney.

Please charge any additional fees or credit any overpayment to Deposit Account No. 11-0855.

Respectfully submitted,



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Date: December 2, 2002

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Attorney Docket No.: L6780/251099

MARKED UP COPY OF AMENDED CLAIMS PURSUANT TO 37 C.F.R. § 1.121(c).

- 1        19. (Amended) A bi-directional optical transport system for passing optical signals,
- 2        comprising:
  - 3            an optical bus for permitting bi-directional transmission of the optical signals;
  - 4            an electrical-to-optical converter for converting electrical communication signals
  - 5            received from first terminal equipment into optical communication signals;
  - 6            a first passive optical interface device coupled to the optical bus for routing the
  - 7            optical communication signals received from the electrical-to-optical converter onto the
  - 8            optical bus in both directions and for permitting the optical signals traveling along the optical
  - 9            bus to pass by in both directions;
  - 10           a second passive optical interface device coupled to the optical bus for routing the
  - 11           optical communication signals traveling along the bus to an optical-to-electrical converter
  - 12           and for permitting the optical signals traveling along the optical bus to pass by in both
  - 13           directions;
  - 14           [an] a fiber optical amplifier for performing bi-directional amplification of the optical
  - 15           signals; and
  - 16           the optical-to-electrical converter for receiving the optical communication signals
  - 17           from the second passive optical interface device and for converting the optical
  - 18           communication signals into the electrical communication signals, the optical-to-electrical
  - 19           converter for providing the electrical communication signals to second terminal equipment.

1           55. (Amended) A structure equipped with an optical transport system enabling  
2       optical communications over an optical bus, comprising:  
3           the structure;  
4           the optical bus for permitting bi-directional transmission of the optical signals,  
5       wherein the optical bus is contained at least in part within the structure;  
6           first terminal equipment located within the structure for generating electrical  
7       communication signals;  
8           an electrical-to-optical converter located within the structure for converting the  
9       electrical communication signals received from the first terminal equipment into optical  
10      communication signals;  
11          a first passive optical interface device located within the structure and coupled to the  
12       optical bus for routing the optical communication signals received from the electrical-to-  
13       optical converter onto the optical bus in both directions and for permitting the optical signals  
14       traveling along the optical bus to pass by in both directions;  
15          [an] a fiber optical amplifier located within the structure for performing bi-directional  
16       amplification of the optical signals;  
17          a second passive optical interface device located within the structure and coupled to  
18       the optical bus for routing the optical communication signals traveling along the bus to an  
19       optical-to-electrical converter and for permitting the optical signals traveling along the  
20       optical bus to pass by in both directions;

21       the optical-to-electrical converter for receiving the optical communication signals  
22      from the second passive optical interface device and for converting the optical  
23      communication signals into the electrical communication signals; and  
24           second terminal equipment located within the structure for receiving electrical  
25      communication signals from the optical-to-electrical converter.

1           58. (Amended) A method for transporting optical signals over an optical bus between  
2      first and second nodes, comprising:  
3           generating electrical communication signals at a first node;  
4           converting the electrical communication signals into optical communication signals;  
5           passively splitting the optical communication signals into two components;  
6           routing the two components of the optical communication signals at a first location  
7      along the optical bus and permitting the optical signals already on the optical bus traveling in  
8      both directions to be passively routed pass the first location, the routing involving directing  
9      the two components of the optical communication signals in opposite directions along the  
10     optical bus and combining the two components with any optical signals already on the  
11     optical bus;  
12           at a second location along the optical bus, passively diverting at least some of the  
13     optical signals on the bus traveling in both directions toward a second node, wherein the  
14     diverting includes permitting the optical signals traveling in both directions to be passively  
15     routed pass the second location;

16       converting the optical signals diverted toward the second node into corresponding  
17   electrical signals, with the electrical signals including the electrical communication signals  
18   generated at the first node; and

19       amplifying the optical signals traveling in both directions between the first node and  
20   the second node, wherein the amplifying is performed passively and is for compensating for  
21   at least some of the losses associated with diverting the optical signals toward the second  
22   node and for losses associated the optical bus.

1       69. (Amended) A method of transporting optical signals between nodes, comprising:

2       providing a bi-directional optical bus, the bi-directional optical bus permitting bi-  
3   directional communication between any of the nodes;  
4       passively diverting at least part of the optical signals traveling along the bus in both  
5   directions toward each node;

6       converting electrical signals generated at any of the nodes into converted optical  
7   signals;

8       separating the converted optical signals into two components and passively  
9   combining the two components of the converted optical signals with the optical signals  
10   traveling in both directions along the optical bus, wherein the passively combining involves  
11   directing the two components of the converted optical signals in opposite directions along the  
12   optical bus;

13 receiving at each node at least part of the optical signals traveling along the optical  
14 bus;

15 at the nodes, converting the received optical signals back into corresponding the  
16 electrical signals; and

17 providing passive amplification of the optical signals traveling along the optical bus,  
18 the passive amplification being bi-directional and compensating at least for some of the  
19 losses associated with passively diverting the optical signals to each node and for losses  
20 associated with the optical bus;

21 wherein by passively diverting optical signals from the optical bus to each node and  
22 by passively combining the two components of converted optical signals from each node  
23 onto the optical bus, each node can transmit optical signals to any other node and also  
24 receive optical signals from any other node.

1 75. (Amended) An optical transport system enabling optical communications  
2 between terminal equipment, comprising:  
3 an optical bus for permitting bi-directional transmission of the optical signals;  
4 first terminal equipment for generating electrical communication signals;  
5 an electrical-to-optical converter for converting the electrical communication signals  
6 received from the first terminal equipment into optical communication signals;  
7 a first passive optical interface device coupled to the optical bus at a first location for  
8 routing the optical communication signals received from the electrical-to-optical converter

9        onto the optical bus in both directions and for permitting the optical signals traveling along  
10      the optical bus to pass by in both directions;  
11            a second passive optical interface device coupled to the optical bus at a second  
12      location for routing the optical communication signals traveling along the bus to at least one  
13      optical-to-electrical converter and for permitting the optical signals traveling along the  
14      optical bus to pass by in both directions;  
15            at least one optical-to-electrical converter for receiving the optical communication  
16      signals from the second passive optical interface device and for converting the optical  
17      communication signals into the electrical communication signals;  
18            a plurality of terminal equipment for receiving the electrical communication signals  
19      from the at least one optical-to-electrical converter; and  
20            [an] a fiber optical amplifier for performing bi-directional amplification of the optical  
21      signals;  
22            wherein electrical communication signals from first terminal equipment is transmitted  
23      over the bi-directional optical bus and can be received by at least one of the plurality of  
24      terminal equipment.

1            79. (Amended) An optical system for communicating with at least one other system  
2      over a bi-directional optical bus, comprising:  
3            an optical transmitter for receiving a first set of electrical signals and for producing a  
4      first set of optical signals;

5        a passive optical interface device for being coupled to the optical bus for routing the  
6        first set of optical signals received from the optical transmitter onto the optical bus in both  
7        directions and for permitting optical signals already traveling along the optical bus to pass by  
8        in both directions;

9        an optical receiver for receiving a second set of optical signals traveling along the  
10      optical bus from the passive optical interface device and for generating a second set of  
11      electrical signals; and

12        [an] a fiber optical amplifier for performing bi-directional amplification of at least one  
13      of the first set and second set of optical signals;

14        wherein the optical amplifier is for compensating for at least some of the coupling  
15      losses associated with the passive optical interface device.

1        84. (Amended) A structure equipped with an optical system for communicating with  
2        at least one other system over a bi-directional optical bus, comprising:

3            the structure;

4            an optical transmitter contained within the structure for receiving a first set of  
5        electrical signals and for producing a first set of optical signals;

6            a passive optical interface device contained within the structure for being coupled to  
7        the optical bus for routing the first set of optical signals received from the optical transmitter  
8        onto the optical bus in both directions and for permitting optical signals already traveling  
9        along the optical bus to pass by in both directions;

10       an optical receiver contained within the structure for receiving a second set of optical  
11      signals traveling along the optical bus from the passive optical interface device and for  
12      generating a second set of electrical signals; and  
13       an optical amplifier contained within the structure for performing bi-directional  
14      amplification of at least one of the first set and second set of optical signals;  
15       wherein the optical amplifier is for compensating for at least some of the coupling  
16      losses associated with the passive optical interface device and for losses associated with the  
17      bi-directional optical bus.

1           85. (Amended) A method for communicating at a first node with a second node over  
2      a bi-directional optical bus, comprising:  
3           generating a first set of electrical signals at the first node;  
4           converting the first set of electrical signals into a first set of optical signals;  
5           passively splitting the first set of optical communication signals into two components;  
6           routing the two components of the first set of optical signals along the optical bus and  
7           permitting the optical signals already on the optical bus traveling in both directions to be  
8           passively routed pass the first node, the routing involving directing the two components of  
9           the first set of optical signals in opposite directions along the optical bus and combining the  
10          two components with any optical signals already on the optical bus;  
11           passively diverting toward the first node, a second set of optical signals which are  
12          generated by the second node and which are on the bus traveling in both directions, wherein

PRELIMINARY AMENDMENT  
Lockheed Martin Corp.  
Reissue of U.S. Patent No. 5,898,801  
Title: Optical Transport System

13      the diverting includes permitting at least some of the optical signals traveling in both  
14     directions to be passively routed pass the first node;  
15        converting the second set of optical signals into a second set of electrical signals; and  
16        amplifying the optical signals traveling in both directions between the first node and  
17     the second node, wherein the amplifying is performed passively and is for compensating for  
18     at least some of the losses associated with diverting the optical signals toward the first node  
19    and for losses associated with routing the optical signals along the optical bus.